

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
26 October 2023 (26.10.2023)

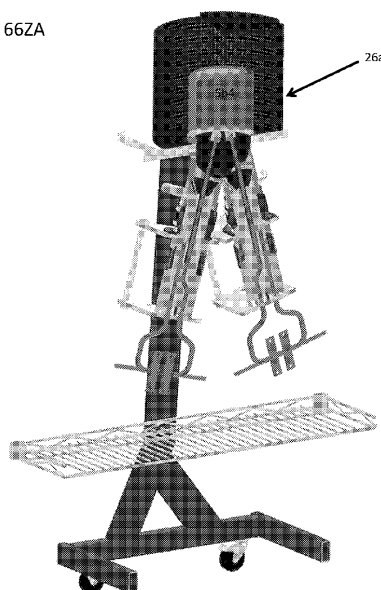


(10) International Publication Number
WO 2023/203472 A2

(51) International Patent Classification:	63/371,754	17 August 2022 (17.08.2022)	US
	63/375,530	13 September 2022 (13.09.2022)	US
(21) International Application Number:	63/429,914	02 December 2022 (02.12.2022)	US
	63/477,760	29 December 2022 (29.12.2022)	US
	PCT/IB2023/053932	24 January 2023 (24.01.2023)	US
(22) International Filing Date:	63/481,384	03 March 2023 (03.03.2023)	US
	63/449,948	04 April 2023 (04.04.2023)	US
	18 April 2023 (18.04.2023)		
(25) Filing Language:	English	(71) Applicant: BRILLIANT LIGHT POWER, INC.	
(26) Publication Language:	English	[US/US]; 493 old trenton road, Cranbury, New Jersey 08512 (US).	
(30) Priority Data:		(72) Inventor: MILLS, Randell L. ; 493 Old Trenton Road, Cranbury, New Jersey 08512 (US).	
63/332,111	18 April 2022 (18.04.2022)	US	
63/339,949	09 May 2022 (09.05.2022)	US	
63/343,971	19 May 2022 (19.05.2022)	US	
63/355,562	24 June 2022 (24.06.2022)	US	
63/368,602	15 July 2022 (15.07.2022)	US	
63/370,106	01 August 2022 (01.08.2022)	US	
		(74) Agent: BALL, Jonathan ; c/o Greenberg Traurig, LLP, One Vanderbilt Avenue, New York, New York 10017 (US).	
		(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,	

(54) Title: INFRARED PLASMA LIGHT RECYCLING THERMOPHOTOVOLTAIC HYDROGEN ELECTRICAL POWER GENERATOR

Fig. 66ZA



(57) Abstract: A power generator is described that provides at least one of electrical and thermal power comprising (i) at least one reaction cell for reactions involving atomic hydrogen products identifiable by unique analytical and spectroscopic signatures, (ii) a molten metal injection system comprising at least one pump such as an electromagnetic pump that provides a molten metal stream to the reaction cell and at least one reservoir that receives the molten metal stream, and (iii) an ignition system comprising an electrical power source that provides low-voltage, high-current electrical energy to the at least one stream of molten metal to ignite a plasma to initiate rapid kinetics of the reaction and an energy gain. In some embodiments, the power generator may comprise: (v) a source of H₂ and O₂ supplied to the plasma, (vi) a molten metal recovery system, and (vii) a power

[Continued on next page]

AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

- (84) Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

- *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*
- *in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE*

converter capable of (a) converting the high- power light output from a blackbody radiator of the cell into electricity using concentrator thermophotovoltaic cells with plasma light recycling or (b) converting the energetic plasma into electricity using a magnetohydrodynamic converter.